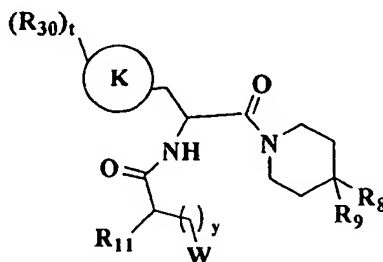


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (Currently Amended) A compound according to the formula



or a pharmaceutically-acceptable salt or hydrate thereof,

in which,

K is aryl or heteroaryl;

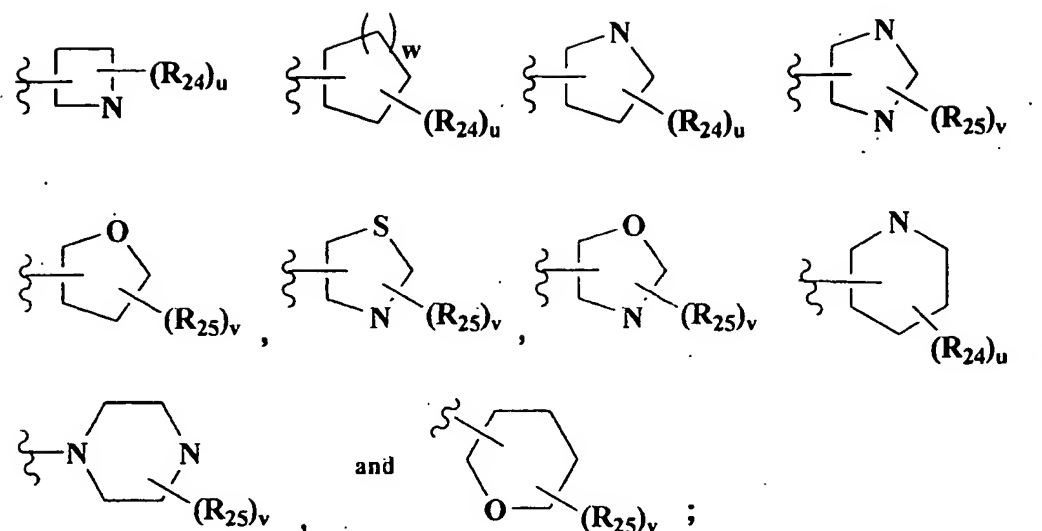
R₈ and R₉ are independently alkyl substituted with heteroaryl, cycloalkyl, aryl, and, -C(=O)R₁₃[[,]];

R₁₁ is selected from hydrogen, alkyl, halogen, hydroxy, hydroxyalkyl, haloalkyl, amino, aminoalkyl, alkylamino, arylalkyl, cycloalkylalkyl, heteroarylalkyl, aryl, and cycloalkyl, and where y is at least 1, then R₁₁ may be heterocyclo or heterocycloalkyl;

R₁₃ is alkyl;

W is selected from:

- 1) -NR₁₆R₁₇, -NR₁₆C(=O)R₂₂, -NR₁₆CO₂R₂₂, -OR₂₃, amidino, and guanidino;
- 2) heteroaryl or heterocyclo groups selected from pyrrolyl, furyl, thienyl, imidazolyl, pyrazolyl, isoxazolyl, thiazolyl, isothiazolyl, 3-azaisothiazolyl, pyridyl, pyrazinyl, pyridazinyl, 1,2-dihydropyridazinyl, and pyranal, wherein said heteroaryl and heterocyclo groups may be substituted or unsubstituted and may have an optionally-substituted carbocyclic, heterocyclic or heteraryl ring fused thereto; or
- 3) a ring selected from:



R_{16} and R_{17} are selected from hydrogen, alkyl and substituted alkyl;

R_{18} , R_{19} and R_{21} are independently hydrogen or C_{1-6} alkyl optionally substituted with halogen;

R_{20} is C_{1-6} alkyl, aryl, or heteroaryl;

R_{22} and R_{23} are independently selected from hydrogen, alkyl, substituted alkyl, aryl, heteroaryl, cycloalkyl, and heterocyclo;

R_{24} and R_{25} at each occurrence are attached to any available carbon or nitrogen atom of W and at each occurrence are selected from hydrogen, C_{1-6} alkyl, halogen, substituted C_{1-6} alkyl, amino, alkylamino, cyano, nitro, trifluoromethoxy, $-C(=O)R_{26}$, $-CO_2R_{26}$, $-SO_2R_{26}$, $-OR_{26}$, aryl, heteroaryl, heterocyclo, and cycloalkyl, and/or two R_{25} attached to two adjacent carbon atoms or adjacent carbon and nitrogen or carbon atoms may join to form a fused optionally-substituted heteroaryl, heterocyclo or cycloalkyl ring, and/or two R_{24} or two R_{25} when attached to the same carbon atom may form keto ($=O$);

R_{26} is hydrogen, alkyl, substituted alkyl, aryl, heterocyclo, cycloalkyl, or heteroaryl, except when joined to a sulphonyl group as in SO_2R_{26} , then R_{26} is not hydrogen;

R_{30} is attached to any available carbon or nitrogen atom of K and is selected from C_{1-4} alkyl, hydroxy, alkoxy, halogen, nitro, cyano, amino, alkylamino, phenyl, and $-C(=O)$ phenyl; and

k and m are independently 0, 1, 2 or 3;

p is 1, 2, or 3;

t is 0, 1 or 2.

u and v are 0, 1, 2, or 3;

w is 0, 1, or 2;

y is 0, 1, 2, 3, or 4; and

z is 0, 1 or 2.

Claim 2. (Cancelled).

2

Claim 3. (Previously Presented) A compound according to claim 1, or a pharmaceutically-acceptable salt or hydrate thereof, in which:

W is $-NR_{16}R_{17}$, $-NHC(=O)R_{22}$, $-NHCO_2\text{alkyl}$, OR_{23} , or azetidinyl;

R_{16} and R_{17} are independently selected from hydrogen, $C_{1-6}\text{alkyl}$, and $(CH_2)_q\text{-J}$, wherein J is selected from naphthyl, furanyl, indolyl, imidazolyl, pyrimidinyl, benzothienyl, pyridinyl, pyrrolyl, pyrrolidinyl, thienyl, and $C_{3-7}\text{cycloalkyl}$, wherein the alkyl, alkylene, and/or J groups of R_{16} and/or R_{17} are optionally substituted with up to three R_{32} ;

R_{22} is selected from $C_{1-6}\text{alkyl}$, trifluoromethyl, alkoxyalkyl, furylalkyl, alkylaminoethyl, phenyl, pyrrolylalkyl, piperidinyl, and piperidinylalkyl; wherein R_{22} in turn is optionally substituted with one to two $C_{1-4}\text{alkyl}$ and/or $-CO_2(C_{1-4}\text{alkyl})$;

R_{23} is hydrogen or phenyl;

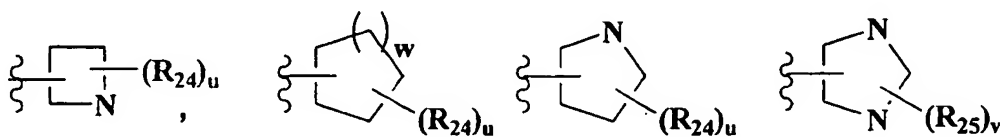
R_{32} is selected from $C_{1-6}\text{alkyl}$, hydroxy, $C_{1-4}\text{alkoxy}$, amino, $C_{1-4}\text{alkylamino}$, $\text{amino}C_{1-4}\text{alkyl}$, trifluoromethyl, halogen, phenyl, benzyl, phenyloxy, benzyloxy, $-C(=O)(CH_2)NH_2$, $-CO_2(C_{1-4}\text{alkyl})$, $-SO_2(C_{1-4}\text{alkyl})$, tetrazolyl, piperidinyl, pyridinyl, and indolyl, wherein when R_{32} is a ring, said ring in turn is optionally substituted with one to two $C_{1-4}\text{alkyl}$, hydroxy, methoxy, and/or halogen; and

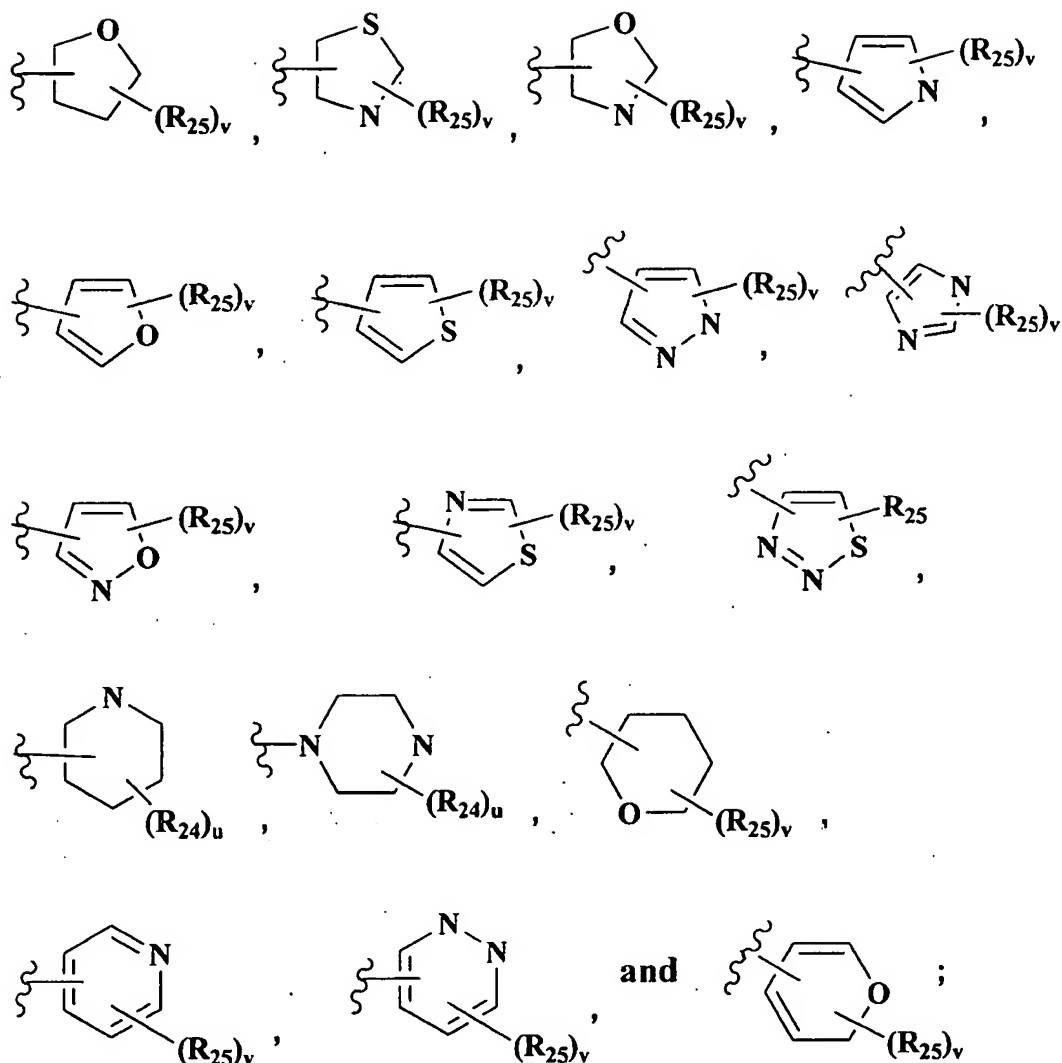
q is 0, 1, 2 or 3.

3

Claim 4. (Previously Presented) A compound according to claim 1, or a pharmaceutically-acceptable salt or hydrate thereof, in which

W is a ring selected from:





R₂₄ is selected from keto (=O), C₁₋₆alkyl, halogen, amino, aminoalkyl, alkylamino, hydroxy, C₁₋₄alkoxy, hydroxyC₁₋₄alkyl, -C(=O)alkyl, -C(=O)aminoalkyl, -C(=O)phenyl, -C(=O)benzyl, -CO₂alkyl, -CO₂phenyl, -CO₂benzyl, -SO₂alkyl, -SO₂aminoalkyl, -SO₂phenyl, -SO₂benzyl, phenyl, benzyl, phenyloxy, benzyloxy, pyrrolyl, pyrazolyl, piperidinyl, pyridinyl, pyrimidinyl, and tetrazolyl, and each R₂₄ in turn is optionally substituted with one to two R₃₁;

R_{25} at each occurrence is attached to any available carbon or nitrogen atom of W and is selected from C_{1-6} alkyl, halogen, amino, aminoalkyl, alkylamino, hydroxy, C_{1-4} alkoxy, hydroxy C_{1-4} alkyl, $-C(=O)$ alkyl, $-C(=O)$ aminoalkyl, $-C(=O)$ phenyl, $-C(=O)$ benzyl, $-CO_2$ alkyl, $-CO_2$ phenyl, $-CO_2$ benzyl, $-SO_2$ alkyl, $-SO_2$ aminoalkyl, $-SO_2$ phenyl, $-SO_2$ benzyl, phenyl, benzyl, phenoxy, benzyloxy, pyrrolyl, pyrazolyl, piperidinyl, pyridinyl, pyrimidinyl, and tetrazolyl, and/or two R_{25} when attached to adjacent carbon atoms may be taken together to

form a fused benzo or pyrazolyl ring, and/or two R_{25} when attached to the same carbon atom (in the case of a non-aromatic ring) may form keto ($=O$), and each R_{25} in turn is optionally substituted with up to two R_{31} ;

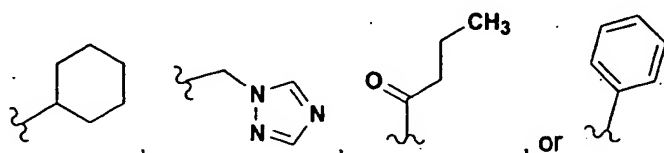
R_{31} is selected from halogen, trifluoromethyl, C_{1-4} alkyl, hydroxy, and C_{1-4} alkoxy;

w is selected from 0, 1, or 2; and

u and v are selected from 0, 1, and 2.

Claim 5. (Cancelled).

⁴
Claim ~~6~~. (Previously Presented) A compound according to claim 1, or a pharmaceutically-acceptable salt or hydrate thereof, in which R_8 and R_9 are independently selected from



⁵
Claim ~~7~~. (Previously Presented) A compound according to claim 1 or a pharmaceutically-acceptable salt or hydrate or prodrug thereof, in which R_{11} is at each occasion independently selected from:

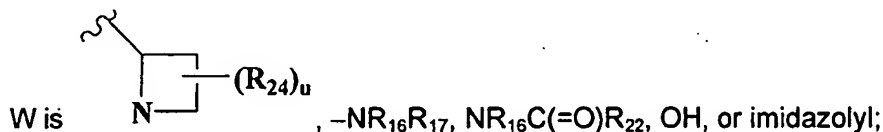
- hydrogen,
- C_{1-6} alkyl,
- C_{1-6} alkyl substituted with up to two of hydroxy, alkoxy, amino, alkylamino, imidazolyl, pyrazolyl, phenyl, naphthyl, pyridinyl, indolyl, pyrimidyl, furyl, thiazolyl, and thienyl, wherein said ringed substituents in turn are optionally substituted with one to three R_{33} and/or have a benzene ring fused thereto optionally substituted with one to two R_{33} ;
- C_{3-7} cycloalkyl optionally substituted with up to two R_{33} and/or having a benzene ring fused thereto, wherein said fused benzene ring is optionally substituted with up to two R_{33} ;
- phenyl optionally substituted with up to three R_{33} ;
- where y is at least one, R_{11} may also be selected from piperidinyl, pyrrolidinyl, piperidinylalkyl, and pyrrolidinylalkyl, in turn optionally substituted with up to three R_{33} ; or

R_{33} is selected from C_{1-6} alkyl, hydroxy, C_{1-6} alkoxy, halogen, nitro, phenyl, benzyl, phenyloxy, benzyloxy, $-C(=O)$ phenyl, amino, alkylamino, and aminoalkyl, wherein when R_{33} includes a phenyl group said phenyl group in turn is optionally substituted with one to two of halogen, nitro, cyano, C_{1-4} alkyl, and/or C_{1-4} alkoxy.

⁶
Claim ~~8~~. (Previously Presented) A compound according to claim 1 or a pharmaceutically-acceptable salt or hydrate thereof, in which
 R_2 is selected from hydrogen, C_{1-6} alkyl, C_{2-6} alkenyl, biphenyl, C_{2-6} alkenylene-K, and $-(CH_2)_g-K$;
 K is selected from phenyl, naphthyl, thienyl, thiazolyl, pyridinyl, pyrimidinyl, and C_{5-6} cycloalkyl,
 wherein each group K in turn is optionally substituted with one to three R_{30} or has a benzene ring fused thereto, which also may be substituted with one to three R_{30} ;
 R_{30} is selected from C_{1-4} alkyl, hydroxy, alkoxy, halogen, nitro, cyano, amino, alkylamino, phenyl, and acylphenyl; and
 g is 0, 1, 2 or 3.

Claims 9 and 10. (Cancelled).

⁷
Claim ~~11~~. (Previously Presented) A compound according to claim 1, or a pharmaceutically-acceptable salt or hydrate thereof, in which



R_{16} and R_{17} are selected from hydrogen and C_{1-4} alkyl;

R_{22} is C_{1-4} alkyl, phenyl or piperidinyl C_{1-4} alkyl;

R_{24} is C_{1-4} alkyl; and

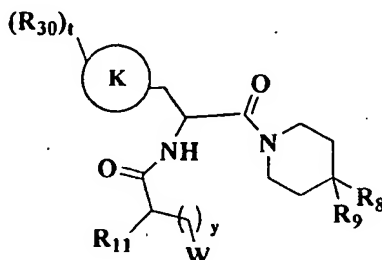
u is 0 or 1.

⁸
Claim ~~12~~. (Previously Presented) A compound according to claim 11, or a pharmaceutically-acceptable salt or hydrate thereof, in which
 R_{11} is hydrogen, C_{1-4} alkyl, or imidazolyl C_{1-4} alkyl.

⁹
Claim ~~13~~. (Previously Presented) A compound according to claim 11 or a pharmaceutically-acceptable salt or hydrate thereof, in which R_{16} and R_{17} are independently selected from hydrogen,

C₁₋₈alkyl, and C₁₋₈substituted alkyl, except R₁₆ and R₁₇ are not alkyl substituted with pyridyl, imidazolyl, thiazolyl, pyrimidinyl, or piperazinyl, and W is not morpholinyl.

Claim 14. (Currently Amended) A compound according to the formula,



or a pharmaceutically-acceptable salt or hydrate thereof, in which,

K is aryl or heteroaryl;

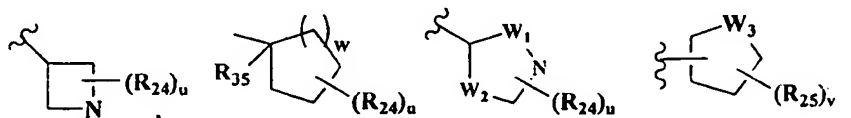
R₈ and R₉ are independently alkyl substituted with heteroaryl, cycloalkyl, aryl, and, -C(=O)R₁₃;

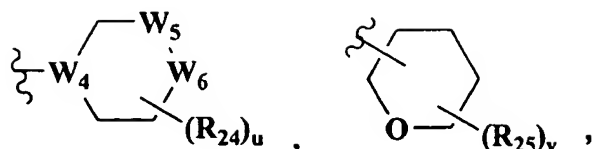
R₁₁ is selected from hydrogen, alkyl, halogen, hydroxy, hydroxyalkyl, haloalkyl, amino, aminoalkyl, alkylamino, arylalkyl, cycloalkylalkyl, heteroarylalkyl, aryl, and cycloalkyl, and where y is at least 1, then R₁₁ may be heterocyclo or heterocycloalkyl;

R₁₃[[.]] is hydrogen, alkyl, substituted alkyl, cycloalkyl, aryl, heterocyclo, or heteroaryl;

W is selected from:

- 1) -NR₁₆R₁₇, -NR₁₆C(=O)R₂₂, -NR₁₆CO₂R₂₂, or -OR₂₃; or
- 2) heteroaryl or heterocyclo groups selected from pyrrolyl, furyl, thienyl, imidazolyl, pyrazolyl, isoxazolyl, thiazolyl, isothiazolyl, 3-azaisothiazolyl, pyridyl, pyrazinyl, pyridazinyl, 1,2-dihydropyridazinyl, and pyranlyl, wherein said heteroaryl and heterocyclo groups may be optionally substituted with one to three R₃₆, and may have an optionally-substituted carbocyclic, heterocyclic or heteraryl ring fused thereto; or
- 3) a carbocyclic, heterocyclic, or heteroaryl ring selected from:





in which W₁ and W₂ are NH, CH₂, O or S, W₃ is O or S, W₄ is N or CH, and W₅ and W₆ are NH or CH₂, wherein when W₁, W₂, W₅ and W₆ are NH or CH₂, said groups are optionally substituted with R₂₄;

R₁₆ and R₁₇ are C₁₋₆alkyl or (CH₂)_q-J, wherein J is selected from aryl, heteroaryl, heterocyclo, and cycloalkyl, wherein the alkyl, alkylene, and/or J groups of R₁₆ and/or R₁₇ are optionally substituted with up to three R₃₂;

R₂₂ is selected from C₁₋₆alkyl, trifluoromethyl, alkoxyalkyl, furylalkyl, alkylaminoethyl, phenyl, pyrrolylalkyl, piperidiny, and piperidinylalkyl, wherein R₂₂ in turn is optionally substituted with one to two C₁₋₄alkyl and/or -CO₂(C₁₋₄alkyl);

R₂₃ is hydrogen or aryl;

R₂₄ and R₂₅ at each occurrence are attached to any available carbon or nitrogen atom of W and at each occurrence are selected from hydrogen, C₁₋₆alkyl, halogen, substituted C₁₋₆alkyl, amino, alkylamino, -C(=O)R₂₆, -CO₂R₂₆, -SO₂R₂₆, -OR₂₆, aryl, heteroaryl, heterocyclo, and cycloalkyl, and/or two R₂₅ attached to two adjacent carbon atoms or adjacent carbon and nitrogen atoms may be taken together to form a fused optionally-substituted heteroaryl, heterocyclo or cycloalkyl ring, and/or two R₂₄ or two R₂₅ when attached to the same carbon atom may form keto (=O);

R₂₆ is hydrogen, alkyl, phenyl, benzyl, or aminoalkyl, except when joined to a sulphonyl group as in SO₂R₂₆, then R₂₆ is not hydrogen;

R₃₂ is selected from C₁₋₆alkyl, hydroxy, C₁₋₆alkoxy, halogen, nitro, phenyl, benzyl, phenyloxy, benzyloxy, -C(=O)phenyl, amino, alkylamino, and aminoalkyl, wherein when R₃₂ includes a phenyl group said phenyl group in turn is optionally substituted with one to two of halogen, nitro, cyano, C₁₋₄ alkyl, and/or C₁₋₄ alkoxy;

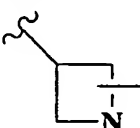
R₃₅ and R₃₆ at each occurrence is selected from C₁₋₆alkyl, halogen, substituted C₁₋₆alkyl, hydroxy, alkoxy, cyano, trifluoromethyl, trifluoromethoxy, nitro, acyl, carboxyalkyl, sulfonyl, aryl, heteroaryl, heterocyclo, and cycloalkyl;

p is 1, 2 and 3;

u and v are 0, 1, or 2; and

w is 0, 1, or 2.

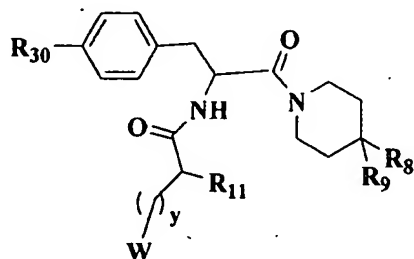
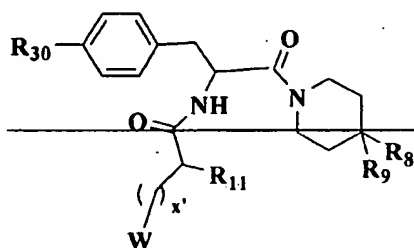
¹¹
 Claim ~~15~~. (Previously Presented) A compound according to claim 14, or a pharmaceutically-acceptable salt or hydrate thereof, in which

W is  $(R_{24})_u$, $-NR_{16}R_{17}$, or $NR_{16}C(=O)R_{22}$;

R_{24} is C_{1-4} alkyl;

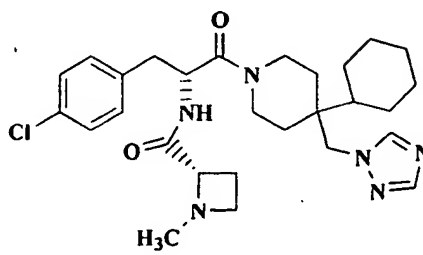
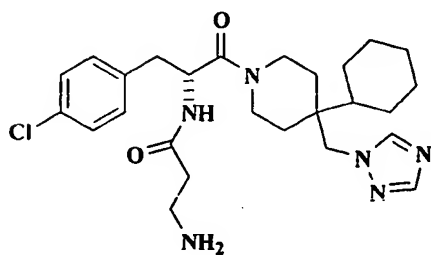
u is 0 or 1.

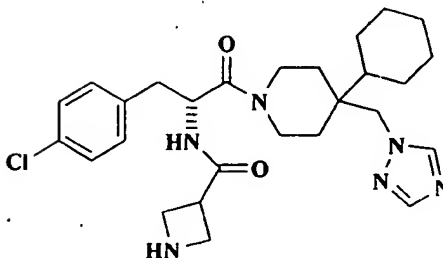
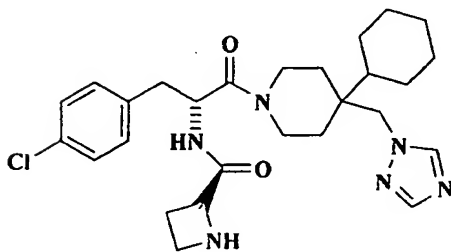
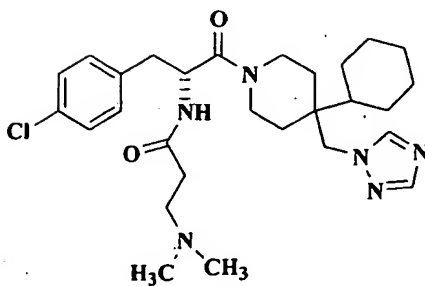
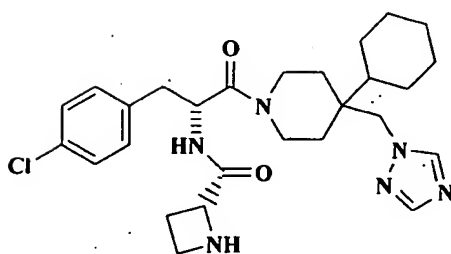
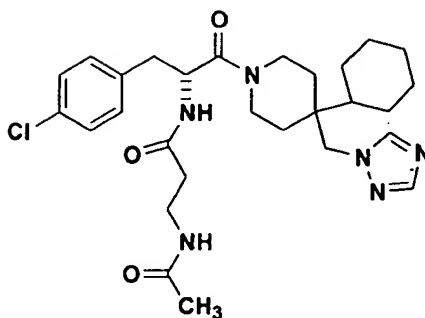
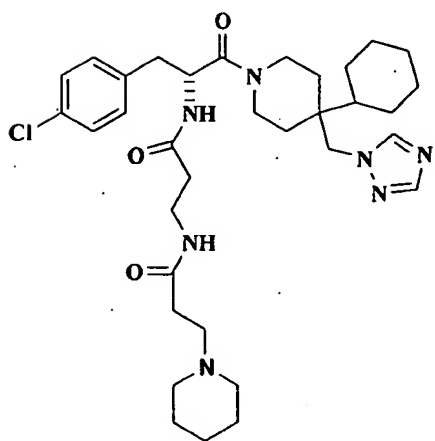
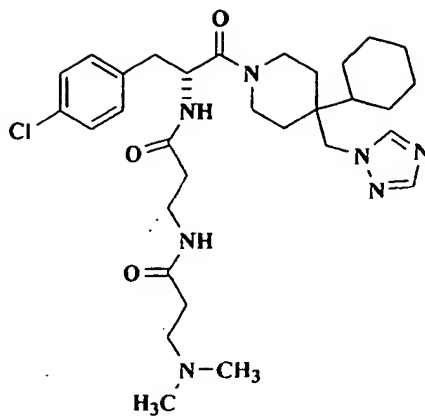
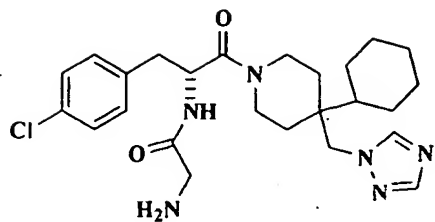
¹²
 Claim ~~16~~. (Currently Amended) A compound according to claim 14, or a pharmaceutically-acceptable salt or hydrate thereof, having the formula,

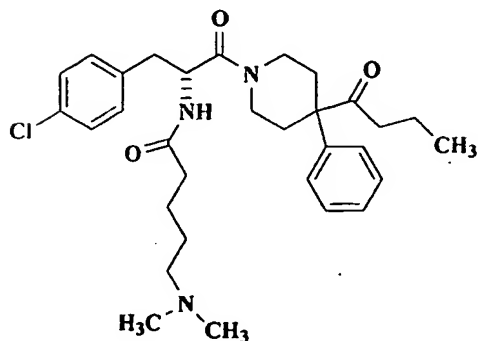
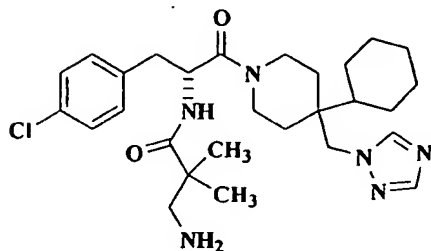
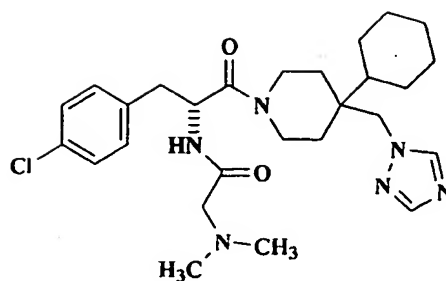
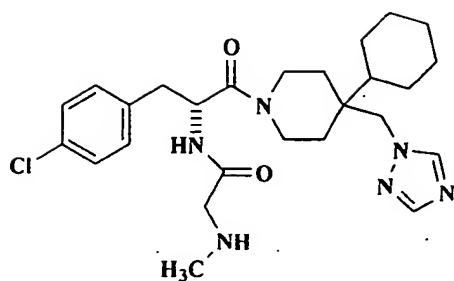


in which y is 0, 1 or 2 and R_{30} is halogen or methoxy.

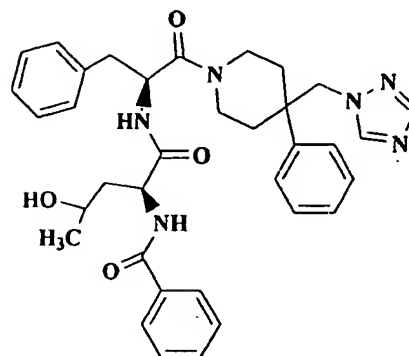
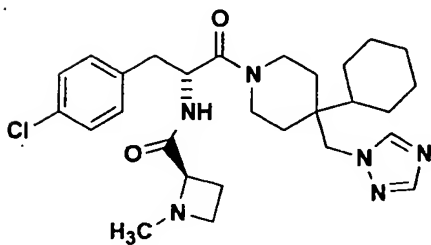
¹³
 Claim ~~17~~. (Previously Presented) A compound having the formula,







or



or a pharmaceutically-acceptable salt, hydrate, or prodrug thereof.

¹⁷
Claim 18. (Previously Presented) A pharmaceutical composition comprising a therapeutically effective amount of at least one compound according to claim 1 or a pharmaceutically-acceptable salt, hydrate or prodrug thereof; and a pharmaceutically-acceptable carrier or diluent.

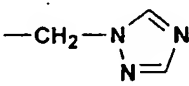
Claims 19-21. (Cancelled).

Claim 22. (Currently Amended) ~~The method of claim 21 in which the~~ A method of treating a disease or disorder treatable by melanocortin-receptor agonism which is an MC-1R or MC-4R associated ~~condition which is an inflammatory or immune condition~~ disease which is inflammatory

bowel disease, irritable bowel syndrome, Crohn's disease, arthritis, HSV-1, HSV-2, HIV, Addison's disease, Epstein-Barr, autoimmune gastritis, autoimmune hemolytic anemia, and autoimmune neutropenia comprising administering to a warm-blooded species in need of such treatment a melanocortin-receptor agonistic-effective amount of at least one compound according to claim 1.

Claim 23. (Cancelled).

¹⁴
Claim 24. (Previously Presented) The compound as defined in Claim 1 wherein one of R₈

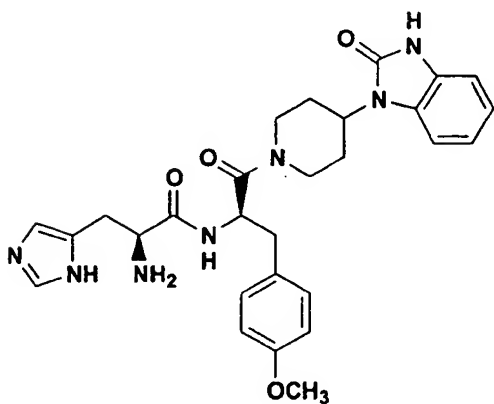
and R₉ is  and the other is cyclohexyl.

Claim 25. (Cancelled).

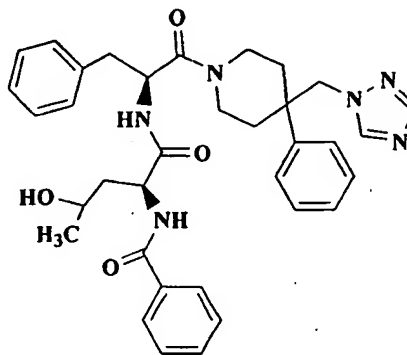
¹⁵
Claim 26. (Previously Presented) The compound as defined in Claim 1 wherein one of R₈

and R₉ is  and the other is .

¹⁶
Claim 27. (Previously Presented) A compound having the structure



or



1325

18

Claim 28. A method of treating disease or disorder selected from inflammatory bowel disease, irritable bowel syndrome, Crohn's disease, arthritis, Addison's disease, autoimmune gastritis, autoimmune hemolytic anemia, and autoimmune neutropenia comprising administering to a warm-blooded species in need of such treatment a MC-1R or MC-4R melanocodin-receptor agonistic-effective amount of at least one compound according to claim 1.